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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/087,226

03/01/2002

Thomas J. Anastasio

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10/28/2003

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EXAMINER

TAYLOR, VICTOR J

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,226

Applicant(s)

ANASTASIO ET AL.

Examiner

Victor J. Taylor

Art Unit

2863

WJ

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-8, 13-19 and 25-50 is/are pending in the application.
- 4a) Of the above claim(s) 5, 9-12 and 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-8, 13-19 and 25-50 is/are rejected.
- 7) ☒ Claim(s) 41 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Office Action*.

DETAILED ACTION

Drawings

1. The drawings were received on August 1, 2002. These drawings are approved.

Specification

2. The disclosure is objected to because of the following informalities:

The use of where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning in the written description must clearly be redefined. The claim term of "posterior", and the term of "sigmoid", and the term of "spatial", and the term of "probability" in the claim language is indefinite and unclear as to what processing steps are taken.

Merriam and Webster collegiate dictionary in the tenth edition defines these terms as,

I. The term "posterior" is used to define the adjective of located behind a part or toward the rear of a structure or relating to the caudal end of the body in quadrupeds or the dorsal side in human beings and other primates. And further defines,

II. The term "sigmoid" to define the adjective of having the shape of the letter S or of relating to the sigmoid flexure of the colon. And further defines,

III. The term "spatial" to define the adjective of relating to or involving or having the nature of space. And further defines,

IV. The term "probability" to define the noun of having the quality or condition of being probable or the likelihood or having a probable situation or condition or event.

Therefore, the term found in the claims for “posterior probability” as defined is considered to mean the backward probability achieved by the back propagation as defined in the specification and for purpose of examination is considered the backward probability as best understood by the examiner. Appropriate correction is required

Furthermore, the term found in the claims for “sigmoid curve” is interpretation by the examiner to mean an S shaped curve as commonly found in the curve plotting of probability densities and in the analog sine wave curve found in AC signals is considered to mean the S shaped curve for purpose of examination as best understood by the examiner. Appropriate correction is required

And furthermore, the examiner interprets the term found in the claims for “spatial target probability” to mean the space target probability as defined above for purpose of examination. Appropriate correction is required

And additionally, the term for “approximating a posterior probability” is interpretation by the examiner to define a back or behind probability as defined as “back-propagation” for the purpose of examination as best understood by the examiner in order to expedite the examination of the instant application. Appropriate clarification and correction is required.

Claim Objections

3. Claims 41 and 42 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 41 is

Art Unit: 2863

dependent to apparatus claim 15 with processing method steps drawn to the supervised learning algorithm and claim 42 which is dependent on method steps in claim 41 is drawn to improper method steps in the apparatus base claim. Corrections are required.

Prior Art

4. The prior art made of record and not relied upon is considered pertinent to applicant;

I. Smyth, US 5,687,291 in class 395/010 is cited for the neural network for estimating a cognitive decision made in response to a stimulus 3 in figure 2.

II. Shenoy et al., US 6,609,017 in class 600/372 is cited for the processed neural network for estimating a cognitive decision with visual and motor functions in figure 1 with computed eye centered coordinates in line 10 of column 15.

III. Smyth, US 6,092,058 in class 706/010 is cited for the automatic aiding of human cognitive functions with computerized displays see abstract lines 1-14 and all elements figure 1.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 1-4, 6-8, 13-19, 25-29-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term found in the claims for "posterior probability" is indefinite as to just what comprises the caudal end (buttocks) of the probability or as to just what caudal probability is indicated. In addition, the term found in the claims for the "sigmoid curve" is indefinite as to just what colon shaped biological curve is indicated.

Furthermore, the term found in the claims for "spatial target probability" is indefinite as well the term for "approximating a posterior probability". This term is interpretation by the examiner to define a back or behind probability as defined above as the "back-propagation". While the term posterior finds meaning in the caudal buttocks of a mammal using processing steps of the well known Kohonen mapping with SOM or SON mapping using the neural networks to define the targeted caudal target probability.

And in addition, the apparatus for tracking a target in a "desired environment" is indefinite as to just what comprises the desired environment.

Claims 2-4, 6-8, 14-19, 25-28, and 30-50 are rejected as variously dependent on rejected base claims.

Appropriate clarification and correction is required

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 2863

8. Claims 1-~~3~~^{4,5}, 4-8, 13-19, and 25-50 are rejected under 35 U.S.C. 102(a) as being anticipated by Christopher A Sequin in the Thesis titled Models Of Neurons In The Superior Colliculus and Unsupervised Learning of Parameters From Time Series, published at the University Of Illinois At Urbana Champaign in 1998.

With regard to claims 1, 13, 15 and 29, Sequin discloses the limitations including a method of determining spatial target probability in the model of the superior colliculus on page 93, and discloses the limitations of acquiring inputs, and the limitations of applying the inputs with the limitations of approximating a probability, and finding a model unit, and choosing the location with the highest probability on page iii and in lines 1-8 of the abstract, and discloses the limitation for the model and the learning algorithms on page 1 in combination with all the pages 2-250 of the prior art thesis publication.

As to dependent claims 2-4, 6-8, 14, 16-19, 25—28, and 30-50 Sequin further discloses all of the dependent limitations including the limitations for at least two sensory inputs that are video (light) and audio (sound) inputs in line 17-22 on page 1. Sequin further discloses the limitation with the first target probability, and the probability approximated by the S curve function in page 118, with the limitations for the steps of using a linear function in the unsupervised learning algorithm found in line 2 on page 44, and further discloses the limitations for the bounded linear function with the limitation steps of training the model neural network in the SOM feature map in line 14 on page 44 in combination with the limitation steps of positioning and applying the inputs to obtain the model neural network in the matrix in lines 1-14 on page 80, and further

Art Unit: 2863


discloses the limitations of the steps of organizing the Kohonen map in the neural SOM on page 44 in combination with the Sigmoid S curve in figure 3.18 on page 118, and in combination with the complete publication.

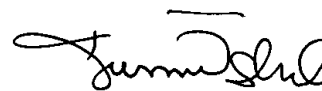
Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 703-305-4470. The examiner can normally be reached on 8:00 to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 703-308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.


Victor J. Taylor
Examiner
Art Unit 2863


KAMINI SHAH
PRIMARY EXAMINER